Dell™ Vostro™ A90 Service Manual

Model PP39S

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Module Cover

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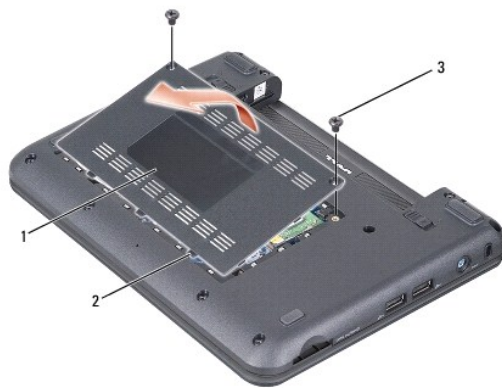
 CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: Before performing this procedure, turn off the computer, disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and the computer, and remove any other external cables from the computer.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

Removing the Module Cover

1. Follow the instructions in Before You Begin.
2. Remove the two screws on the module cover.
3. Lift the cover off the computer at an angle as shown in the figure.

1	module cover	2	module cover tab (3)
3	screw (2)		

Replacing the Module Cover

1. Align the tabs on the module cover to the bottom of the computer and gently replace the module cover.
2. Replace and tighten the two screws on the module cover.
3. Slide the battery into the battery bay, until it clicks into place.
4. Slide the battery-lock latch to the lock position.

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Before You Begin

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- [Recommended Tools](#)
- [Turning Off Your Computer](#)
- [Before Working Inside Your Computer](#)

This section provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in [Turning Off Your Computer](#) and [Before Working Inside Your Computer](#).
- You have read the safety information that shipped with your computer.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Flash BIOS update program CD

NOTE: Flash BIOS update program CD ships only in certain countries when you replace the system board.

Turning Off Your Computer

NOTICE: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Save and close all open files and exit all open programs.

2. Shut down the operating system:

   Windows® XP:

   Click **Start**→ **Shut Down**→ **Shut down**.

   Ubuntu® Dell Desktop:

   Click → **Quit** → **Shut down**.

   Ubuntu® Classic Desktop:

   Click → **Shut down**.

3. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button until the computer turns off.

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own personal safety.

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

NOTICE: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTICE: To avoid damaging the computer, perform the following steps before you begin working inside the computer.

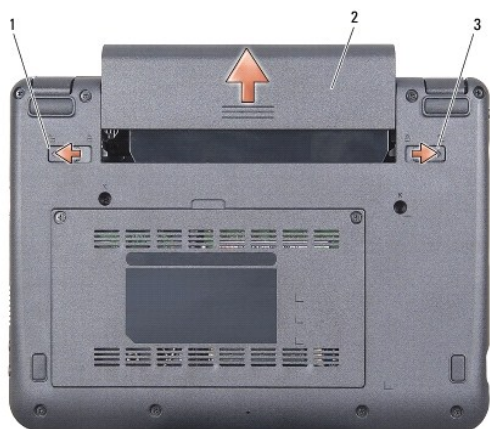
1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).
3. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.
4. Press and eject any installed cards from the 3-in-1 memory card reader.

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

5. Disconnect all telephone or network cables from the computer.
6. Disconnect your computer and all attached devices from their electrical outlets.

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you service the computer.

NOTICE: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

7. Turn the computer over.

1	battery-bay release latch	2	battery
3	battery-lock latch		

8. Slide the battery-bay release latch and the battery-lock latch towards the outer edges.
9. Slide the battery out of the battery bay.
10. Turn the computer top-side up, open the display, and press the power button to ground the system board.

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Flashing the BIOS

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If a BIOS-update program CD is provided with the new system board, flash the BIOS from the CD. If you do not have a BIOS-update program CD, flash the BIOS from the solid-state drive.

NOTE: Your computer may or may not ship with an external optical drive. Use an external optical drive or any external storage device for the procedures that involve discs.

Flashing the BIOS From a CD

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.

NOTE: If you use a BIOS-update program CD to flash the BIOS, set up the computer to boot from a CD before inserting the CD.

NOTE: Your computer may or may not ship with an external optical drive. Use an external optical drive or any external storage device for the procedures that involve discs.

2. Insert the BIOS-update program CD, and restart the computer.

   Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

3. Press <0> during POST to enter the system setup program.

4. Press <Fn> and <F9> to reset the computer defaults.

5. Press <Esc>, select **Save changes and reboot**, and press <Enter> to save configuration changes.

6. Remove the flash BIOS-update program CD from the drive and restart the computer.

Flashing the BIOS From the Solid-state Drive in Windows® XP

1. Ensure that the AC adapter is plugged in, the main battery is properly installed, and a network cable is attached.

2. Turn on the computer.

3. Locate the latest BIOS update file for your computer at **support.dell.com**.

4. Click **Download Now** to download the file.

5. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

   The **File Download** window appears.

6. Click **Save this program to disk** and then click **OK**.

   The **Save In** window appears.

7. Click the down arrow to view the **Save In** menu, select **Desktop**, and then click **Save**.

8. Click **Close** if the **Download Complete** window appears.

   The file icon appears on your desktop and is titled the same as the downloaded BIOS update file.

9. Double-click the file icon on the desktop and follow the instructions on the screen.

Flashing the BIOS From the Solid-state Drive in Ubuntu®

1. Ensure that the AC adapter is plugged in and the main battery is properly installed.

2. Turn on the computer.

NOTE: Your computer may or may not ship with an external optical drive. Use an external optical drive or any external storage device for the procedures that involve discs.

3. Click → **Places**→ **Documents**.

4. Create a new folder and name it **BIOS**.

5. Locate the latest BIOS update file for your computer at **support.dell.com**.

6. Click **Download Now** to download the file.

7. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

   The **File Download** window appears.

8. Click **Save this program to disk** and then click **OK**.

   The **Save In** window appears.

9. Click the down arrow to view the **Save In** menu, select **Documents**→ **BIOS**, and then click **Save**.

10. Click **Close** if the **Download Complete** window appears.

11. Open the terminal command line application and proceed as follows:

    a. Type `sudo -s`

    b. Type your password

    c. Type `cd Documents`

    d. Type `cd BIOS`

    e. Type `./a90A00`

    `flash start...` string appears.

    The computer will restart automatically once the BIOS flash is complete.

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Internal Card With Bluetooth® Wireless Technology

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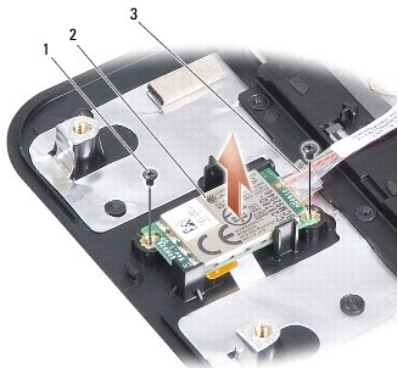
 CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

If you ordered a card with Bluetooth wireless technology with your computer, it is already installed.

Removing the Card

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Turn the palm rest over.
6. Remove the two screws that secure the card to the palm rest.
7. Lift the card out of the palm rest.

1	screw (2)	2	internal card with Bluetooth wireless technology
3	cable		

Replacing the Card

1. Insert card into the slot and replace the two screws.
2. Turn the palm rest over.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the keyboard (see Replacing the Keyboard).

5. Replace the module cover (see Replacing the Module Cover).

6. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Camera

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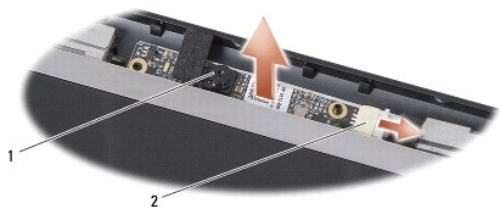
 CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

Removing the Camera

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the display bezel (see Removing the Display Bezel).
7. Disconnect the camera cable from the connector.
8. Remove the camera board.

1	camera	2	camera cable connector

Replacing the Camera

1. Align the camera board over the slot holes and gently replace it.
2. Reconnect the camera cable to the connector.
3. Replace the display bezel (see Replacing the Display Bezel).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the keyboard (see Replacing the Keyboard).
7. Replace the module cover (see Replacing the Module Cover).
8. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Coin-Cell Battery

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CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Coin-Cell Battery

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the system board (see Removing the System Board).
7. Turn the system board over.
8. Disconnect the coin-cell battery cable from the system board connector.
9. Remove the coin-cell battery.

1	coin-cell battery	2	coin-cell battery cable connector

Replacing the Coin-Cell Battery

1. Replace the coin-cell battery.
2. Connect the coin-cell battery cable to the system board connector and hold the coin-cell battery in place.
3. Replace the system board (see Replacing the System Board).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the keyboard (see Replacing the Keyboard).

7. Replace the module cover (see Replacing the Module Cover).

8. Slide the main battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Display

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CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

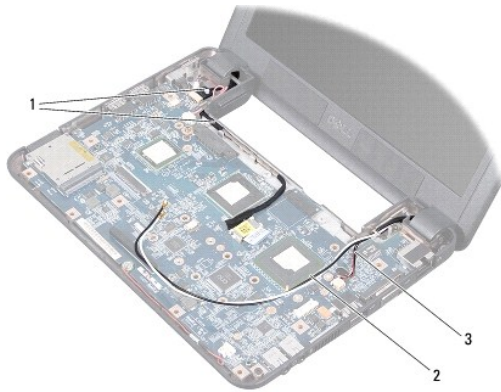
NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Display Assembly

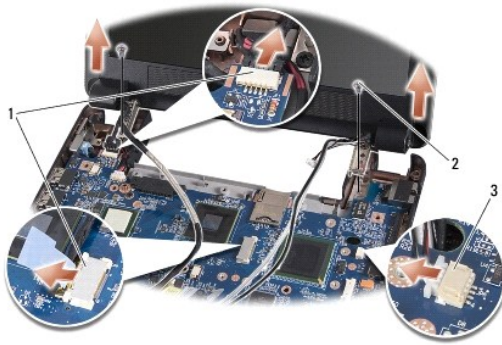
Removing the Display Assembly

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Turn the computer over, make note of the cable routing, and carefully dislodge the Mini-Card antenna cables from their routing guides.
6. Pull the Mini-Card antenna cables through the system board as shown in the figure.

1	Mini-Card antenna cables		

7. Disconnect the display cables and the speaker cable from the respective system board connectors.
8. Make note of the display cables and the speaker cable routing and carefully dislodge from their routing guides as shown in the figure.

1	display cables	2	Mini-Card antenna cables
3	speaker cable		

9. Remove the two screws from the display assembly hinges.

10. Remove the display assembly from the computer base.

1	display cable connectors	2	screw (2)
3	speaker cable connector		

Replacing the Display Assembly

1. Align the display assembly hinges with the holes in the base of the computer and then lower the display into place.

2. Replace and tighten the two display assembly hinge screws.

3. Carefully route the display cables and the speaker cable into their routing guides and connect them to the respective system board connectors.

4. Carefully slide the Mini-Card antenna cables through the system board and into their routing guides.

5. Replace the palm rest (see Replacing the Palm Rest).

6. Replace the keyboard (see Replacing the Keyboard).

7. Replace the module cover (see Replacing the Module Cover).

8. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

Display Bezel

Removing the Display Bezel

NOTICE: The display bezel is extremely fragile. Be careful when removing it to prevent damaging the bezel.

1. Follow the instructions in Removing the Display Assembly.
2. Using your fingertips, carefully pry up the inside edge of the display bezel.
3. Remove the display bezel.

1	display panel	2	display bezel

Replacing the Display Bezel

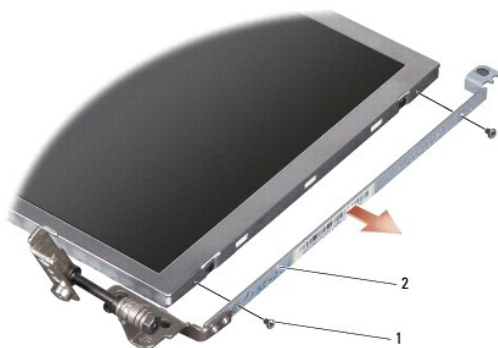
1. Realign the display bezel over the display panel, and gently snap into place.
2. Follow the instructions in Replacing the Display Assembly.

Display Panel

Removing the Display Panel

1. Follow the instructions Removing the Display Assembly.
2. Remove the display bezel (see Removing the Display Bezel).
3. Remove the camera (see Removing the Camera).
4. Remove the six screws securing the display panel assembly to the display cover.
5. Remove the display panel assembly.

1	display cover	2	screw (6)
3	display panel		

6. Remove the four screws (two on each side) that secure the display panel brackets to the display panel.

1	screw (4 total; 2 on each side)	2	display panel bracket (1 left, 1 right)

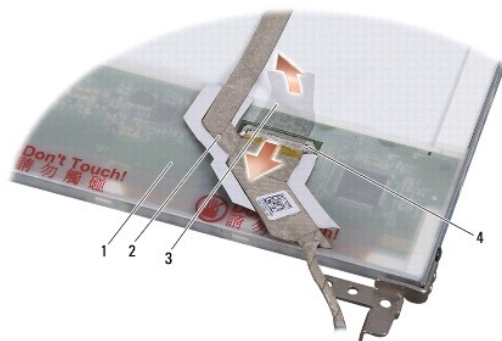
Replacing the Display Panel

1. Attach the display bracket to the display panel by replacing the four screws (two on each side of the display panel).
2. Align the display assembly panel with the display cover and replace the six screws.
3. Replace the camera (see Replacing the Camera).
4. Replace the display bezel (see Replacing the Display Bezel).
5. Follow the instructions in Replacing the Display Assembly.

Display Panel Cable

Removing the Display Panel Cable

NOTE: The Display Panel cables and connectors may differ depending on the Display Panel you ordered.

1. Follow the instructions in Removing the Display Assembly.
2. Remove the display bezel (see Removing the Display Bezel).
3. Remove the camera (see Removing the Camera).
4. Remove the display panel (see Removing the Display Panel).
5. Turn over the display panel and place it on a clean surface.
6. Lift the conductive tape that secures the flex cable to the display board connector and disconnect the flex cable.

1	back of display panel	2	flex cable
3	conductive tape	4	display board connector

Replacing the Display Panel Cable

1. Connect the flex cable to the display board connector and secure it with the conductive tape.
2. Replace the display panel (see Replacing the Display Panel).
3. Replace the camera (see Replacing the Camera).
4. Replace the display bezel (see Replacing the Display Bezel).
5. Follow the instructions in Replacing the Display Assembly.

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Keyboard

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For more information about the keyboard, see the *Dell Technology Guide*.

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Keyboard

1. Follow the instructions in Before You Begin.

2. Turn the computer over.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time- consuming to replace. Be careful when removing and handling the keyboard.

NOTICE: Be extremely careful when removing and handling the keyboard. Failure to do so could result in scratching the display panel.

3. Remove the two screws from the base of the computer.

4. Turn the computer top-side up and open the display.

5. Carefully lift the keyboard and hold it to access the keyboard connector.

NOTICE: The securing tabs that secure the keyboard cable to the system board are fragile. To avoid damage to the securing tabs, do not push them too far.

6. Push out the securing tabs that secure the keyboard cable to the system board and remove the keyboard.

1	keyboard	2	keyboard tab (3)
3	keyboard cable	4	securing tab (2)

Replacing the Keyboard

1. Slide the keyboard cable connector into the slot and push in the securing tabs to secure the keyboard cable to the system board.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time- consuming to replace. Be careful when removing and handling the keyboard.

2. Align the tabs on the keyboard to the bottom of the palm rest and keep it in place.

3. Close the display, turn the computer over.

4. Replace the two screws in the base of the computer.

5. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch to the lock position.

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Memory Module

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CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

You can increase your computer memory by replacing the current memory module on the system board with a higher one. See "Basic Specifications" in your *Setup Guide* for information on the memory supported by your computer. Install only memory modules that are intended for your computer.

NOTE: Memory modules purchased from Dell are covered under your computer warranty.

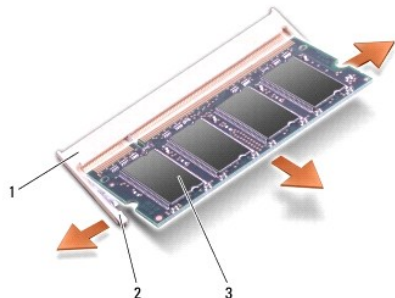
Your computer has a user-accessible SODIMM socket that can be accessed from the bottom of the computer.

Removing the Memory Module

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

The memory module is located at the bottom of the computer.

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).

NOTICE: To prevent damage to the memory module connector, do not use tools to spread the memory module securing clips.

1	memory module connector	2	securing clip (2)
3	memory module		

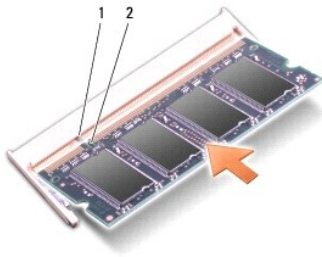
3. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the module pops up.
4. Remove the memory module from the connector.

Replacing the Memory Module

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

1. Follow the instructions in Before You Begin.
2. Align the notch in the memory module edge connector with the tab in the memory module connector slot.

3. Slide the memory module firmly into the slot at a 45-degree angle, and rotate the memory module down until it clicks into place. If the module does not click into place, remove the memory module and reinstall it.

NOTE: If the memory module is not installed properly, the computer may not boot. No error message indicates this failure.

1	tab	2	notch

NOTICE: If the cover is difficult to close, remove the module and reinstall it. Forcing the cover to close may damage your computer.

4. Replace the module cover (see Replacing the Module Cover).

5. Slide the battery into the battery bay until it clicks into place and slide the battery-lock latch to the lock position.

6. Turn on the computer.

As the computer boots, it detects the additional memory and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer:

Windows® XP:

Right-click the **My Computer** icon on your desktop, then click **Properties**→ **General**.

Ubuntu®:

Click → **System**→ **Administration**→ **System Monitor**.

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Microphone

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 CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

Removing the Microphone

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Disconnect the microphone cable from the system board.
6. Remove the microphone from the computer base.

1	microphone	2	microphone cable connector

Replacing the Microphone

1. Insert the microphone in the slot and connect the microphone cable to the connector on the system board.
2. Replace the palm rest (see Replacing the Palm Rest).
3. Replace the keyboard (see Replacing the Keyboard).
4. Replace the module cover (see Replacing the Module Cover).
5. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Wireless Mini-Card

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CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you begin working inside the computer.

NOTE: Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

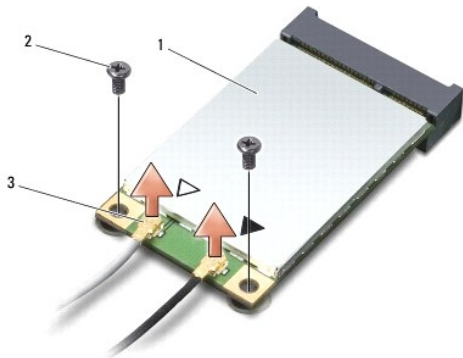
If you ordered a wireless Mini-Card with your computer, the card is already installed.

Your computer supports one full Mini-Card slot for Wireless Local Area Network (WLAN).

NOTE: Depending on the configuration of the computer when it was sold, the Mini-Card slot may not have a Mini-Card installed.

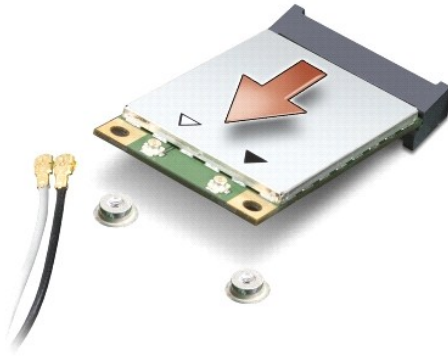
Removing the Mini-Card

1. Follow the instructions in Before You Begin.

2. Remove the module cover (see Removing the Module Cover).

1	Mini-Card	2	securing screw (2)
3	antenna cable connector (2)		

3. Disconnect the antenna cables from the Mini-Card.

4. Release the Mini-Card by removing the securing screws.

5. Lift the Mini-Card out of its system board connector.

NOTICE: When the Mini-Card is not in the computer, store it in protective antistatic packaging. See the information on protection against electrostatic discharge in the safety information that shipped with your computer.

Replacing the Mini-Card

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

NOTICE: To avoid damage to the Mini-Card, never place cables under the card.

1. Follow the instructions in Before You Begin.
2. Remove the new Mini-Card from its packing.

NOTICE: Use firm and even pressure to slide the card into place. If you use excessive force, you may damage the connector.

3. Insert the Mini-Card at a 45-degree angle into the system board connector.
4. Press the other end of the Mini-Card down into the slot on the system board and replace the two securing screws.
5. Connect the appropriate antenna cables to the Mini-Card you are installing. The following table provides the antenna cable color scheme for the Mini-Card supported by your computer.

Connectors on the Mini-Card	Antenna Cable Color Scheme
WLAN (2 antenna cables)	
Main WLAN (white triangle)	white
Auxiliary WLAN (black triangle)	black

6. Secure unused antenna cables in the protective mylar sleeve.
7. Replace the module cover (see Replacing the Module Cover).
8. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch to the lock position.
9. Install the drivers and utilities for your computer, as required. For more information, see the *Dell Technology Guide*.

NOTE: If you are installing a Mini-Card from a source other than Dell, you must install the appropriate drivers and utilities. For more information, see the *Dell Technology Guide*.

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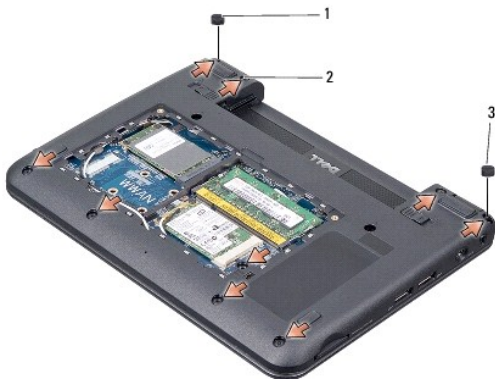
Palm Rest

Dell™ Vostro™ A90 Service Manual

Removing the Palm Rest

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Turn the computer over and remove the left and right rubber bumpers.
5. Remove the nine screws from the computer base.

1	left rubber bumper	2	screw (9)
3	right rubber bumper		

6. Turn the computer over and remove the seven screws from the top of the palm rest.
7. Disconnect the Bluetooth card cable, touch pad cable, and the power button cable from the respective system board connectors.

1	power button cable	2	screw (7)
3	Bluetooth card cable	4	palm rest
5	touch pad cable		

NOTICE: Carefully separate the palm rest from the computer base to avoid damage to the palm rest.

8. Starting at the back center of the palm rest, use your fingers to gently ease the palm rest from the computer base by lifting the inside of the palm rest while pulling on the outside.

NOTE: The thermal pads may stick to the bottom of the palm rest. Remove the thermal pads from the bottom of the palm rest.

9. Remove the thermal pads from the processor, North Bridge, and South Bridge.

Replacing the Palm Rest

1. Remove the centrifugal paper of the thermal pads, that shipped with your new palm rest, and paste it on the processor, North Bridge, and South Bridge.

1	thermal pad (3)	2	south bridge
3	north bridge	4	processor

2. Align the tabs of the palm rest with the computer base.

3. Gently snap the palm rest into place.

4. Connect the Bluetooth card cable, touch pad cable, and power button cable to the respective system board connectors.

5. Replace the seven screws on the top of the palm rest.

6. Turn the computer over and replace the nine screws in the computer base.
7. Replace the left and right rubber bumpers.
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the module cover (see Replacing the Module Cover).
10. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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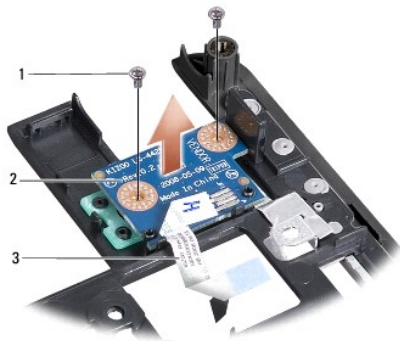
Power Button Board

Dell™ Vostro™ A90 Service Manual

 CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on the back of the computer).

Removing the Power Button Board

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Turn the palm rest over.
6. Remove the two screws that secure the power button board to the palm rest.
7. Lift the power button board off the palm rest.

1	screw (2)	2	power button board
3	power button cable		

Replacing the Power Button Board

1. Insert the power button board into the slot and tighten the two screws.
2. Turn the palm rest over.
3. Replace the palm rest (see Replacing the Palm Rest).
4. Replace the keyboard (see Replacing the Keyboard).
5. Replace the module cover (see Replacing the Module Cover).

6. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Speaker

Dell™ Vostro™ A90 Service Manual

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the Speaker

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the palm rest (see Removing the Palm Rest).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the display bezel (see Removing the Display Bezel).
7. If necessary, remove the two corner screws on the LCD panel to free the speaker cable.
8. Remove the three speaker screws from the display base.
9. Make note of the speaker cable routing.
10. Remove the speakers.

1	screw (3)	2	speaker cable

Replacing the Speaker

1. Replace the speakers and the speaker cables.
2. Replace the three screws that secure the speakers to the display base.
3. Replace the speaker cable into its routing path.
4. If removed, replace the two corner screws on the LCD panel to secure the speaker cable.
5. Replace the display bezel (see Replacing the Display Bezel).

6. Replace the display assembly (see Replacing the Display Assembly).

7. Replace the palm rest (see Replacing the Palm Rest).

8. Replace the keyboard (see Replacing the Keyboard).

9. Replace the module cover (see Replacing the Module Cover).

10. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

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Solid-state Drive

Dell™ Vostro™ A90 Service Manual

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: If you remove the solid-state drive from the computer when the drive is hot, do not touch the solid-state drive.

NOTICE: To prevent data loss, turn off your computer (see Turning Off Your Computer) before removing the solid-state drive. Do not remove the solid-state drive while the computer is on or in Sleep state.

NOTICE: Solid-state drives are extremely fragile. Exercise care when handling the solid-state drive.

NOTE: Dell does not guarantee compatibility or provide support for solid-state drives from sources other than Dell.

NOTE: If you are installing a solid-state drive from a source other than Dell, you need to install an operating system, drivers, and utilities on the new solid-state drive (see related topics in your *Setup Guide*).

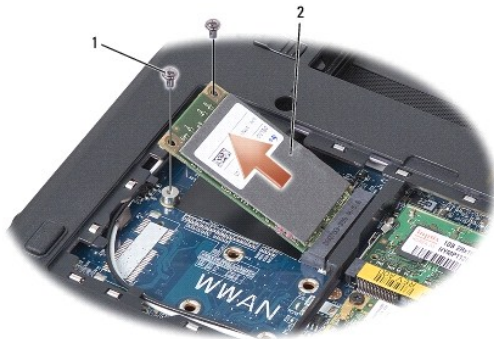
Removing the Solid-state Drive

1. Follow the instructions in Before You Begin.

2. Remove the module cover (see Removing the Module Cover).

NOTICE: When the solid-state drive is not in the computer, store it in protective antistatic packaging (see "Protecting Against Electrostatic Discharge" in the safety instructions that shipped with your computer).

3. Remove the two screws that secure the solid-state drive.

4. Lift the solid-state drive out of its system board connector.

1	screw (2)	2	solid-state drive

Replacing the Solid-state Drive

1. Remove the new drive from its packaging.

2. Insert the solid-state drive into the slot at a 45-degree angle.

3. Press the solid-state drive down and replace the two screws that secure the drive.

4. Replace the module cover (see Replacing the Module Cover).

5. Slide the battery into the battery bay, until it clicks into place and slide the battery-lock latch towards the lock position.

NOTICE: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

6. Install the operating system for your computer, as needed (see "Restoring Your Operating System" in your computer *Setup Guide or Ubuntu Quick Start Guide*).

7. Install the drivers and utilities for your computer, as needed (see "Reinstalling Drivers and Utilities" in your computer *Setup Guide*).

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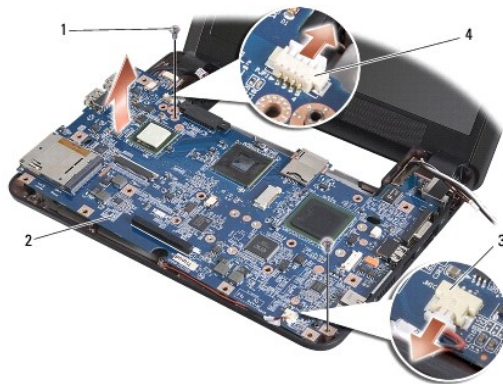
System Board

Dell™ Vostro™ A90 Service Manual

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Removing the System Board

1. Follow the instructions in Before You Begin.
2. Remove the module cover (see Removing the Module Cover).
3. Remove the memory module (see Removing the Memory Module).
4. Remove the solid-state drive (see Removing the Solid-state Drive).
5. Remove the keyboard (see Removing the Keyboard).
6. Remove the palm rest (see Removing the Palm Rest).
7. Disconnect the display cables, Mini-Card antenna cables, and speaker cable from the respective system board connectors (see Display Assembly).
8. Disconnect the microphone cable and AC adapter cable from the respective system board connectors.
9. Remove the two screws that secure the system board to the computer base.
10. Lift the system board at an angle towards the side of the computer and out of the computer base.

1	screw (2)	2	system board
3	microphone cable connector	4	AC adapter cable connector

Replacing the System Board

NOTE: The thermal pads may stick to the bottom of the palm rest. Remove the thermal pads from the bottom of the palm rest.

1. Remove the centrifugal paper of the thermal pads that shipped with your new system board and paste it on the processor, North Bridge, and South Bridge.

1	thermal pad (3)	2	south bridge
3	north bridge	4	processor

2. Follow all the steps in Removing the System Board in reverse order.

NOTICE: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

3. Turn on the computer.

NOTE: After you have replaced the system board, enter the computer Service Tag into the BIOS of the replacement system board.

4. Insert the CD that accompanied the replacement system board into the appropriate drive. Follow the instructions that appear on the screen.

5. The keyboard matrix may change after you replace the system board. To set the keyboard matrix according to your country, see Setting the Keyboard Matrix.

Setting the Keyboard Matrix

1. Turn off your computer (see Turning Off Your Computer).

2. If your computer is connected to the AC adapter, disconnect the AC adapter from the computer.

3. Press and hold the following key combination for the desired keyboard matrix:-
   - United States: <Fn><S>
   - United Kingdom: <Fn><K>
   - Japan: <Fn><J>
   - Korea: <Fn><E>

4. Connect the AC adapter to the computer and then plug it into a wall outlet or surge protector.

5. Release the key combination.

Updating Service Tag

The system board's BIOS chip contains the service tag, which is also visible on a barcode label on the bottom of the computer.

Follow these instructions to enter the service tag:

Manually -

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.

2. Press <0> during POST to enter the system setup program.

3. Navigate to the security tab and enter the service tag in the **Set Service Tag** field.

Using CD -

The replacement kit for the system board includes a CD that provides a utility for transferring the service tag to the replacement system board.

 NOTE: Your computer may or may not ship with an external optical drive. Use an external optical drive or any external storage device for the procedures that involve discs.

 NOTICE: Handle components and cards by their edges, and avoid touching pins and contacts.

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NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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